

endeavoured to describe some of the modifications of this species as they occur at the present point of time on the coasts of Northumberland and Durham; let us hope that others will be induced to describe more of its modifications as prevailing on these coasts and elsewhere during either the present or an earlier period. If this should be done to a proper extent, it is not too much to anticipate that sufficient materials will be accumulated to necessitate the publication of an illustrated monograph of the species *Buccinum undatum*.

XXVII.—*The Birds of Calcutta, collected and described by*  
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[Continued from p. 176.]

17. *Phenicornis flammea*, Boie.—Musc. flammea, Forster, Lath. Temm. Pl. Col. 263.

Alarum tectricibus quibusdam pennisque posticis apice flavo-limbatis. Rostrum carina paulo obtusa.

♀ (Calcutta 22 Febr.) cinerea, uropygio concolori; subtus pallide flava, gula alba; linea per oculos fusca, supercilia albida. Ala nigra, vitta flava e fascia remigum 5, et sequentium. Tectrices inferiores et margo carpi flava. Cauda prioris. Rostrum et pedes nigri. Long.  $7\frac{1}{2}$  poll., ala 87 millim., tarsus 14, rostrum e fronte 12; altitudo 5, latitudo 7. Iris fuscens. (Alia simillima, reetricibus utrinque 5 apice flavis, e Calcutta, Mus. Stockh.)

♂ junior (e Calcutta, Mus. Stockh.), ut ♀ sed subtus sordide coloratus, collo antico parum flavo tineto. Uropygium leviter flavotinctum. Flavedo caudæ splendidior. Ala 88 mill.

♂ adultus e Java, superne cum gula et jugulo niger, cæruleo nitens; subtus uropygio, vitta alarum caudaque lateribus splendide luteo-fulvis. Rectrices utrinque 5 extrorsum luteæ. Mensuræ ut ♀.

I saw only the described hen-bird without being able to examine its actions, &c. closer. It had insects in the stomach, and in its cellular texture under the belly-skin lay two pretty large intestinal worms (*Ascarides*). The ovary was quite visible, but small.

17 b. *Phenicura miniata*? Temm. Pl. Col. 156.

♂ Junior? e Calcutta, Mus. Stockh. Cinereus, subtus cinerascens-roseus, gula alba. Ala nigra, fascia remigum, apicibus tectricum majorum pennarumque posticarum, et parte exteriori reetricum 5 lateralium læte rubris (roseis). Uropygium rubro (nec flavescens) tinctum. Ala 87 millim., tarsus 14. Simillimus mari juniiori prioris, colore flavescens in rubrum mutatus†.

\* Translated from the 'Physiographiska Sällskapet's Tidskrift' by R. Bertram, with Notes by H. E. Strickland, M.A.

† This bird is the *Pericrocotus roseus* of Vieill., and not the *miniatus* of Temminck.—H. E. S.

18. *Acanthiza trochiloides*, n. Olivaceo-viridis, subtus alba, antice flavo tincta. Cauda integra penna extima brevior, apice intus alba. Linea per oculos fusca.

♂ 15 Febr. Caput paullulum fusco tinctum; supercilia elongata pallide flava. Ala subtus alba; tectrices superiores apice pallescentes. Cauda fuscescens, obsolete transversim undato-micans. Rostrum subtus album, superne et pedes pallide fusci. Long. 5 poll.; ala 47 millim., tarsus 19, cauda 45, rostrum e fronte 9. Rostrum apice leviter compressum. Remiges 3 anticæ gradatæ: 2<sup>a</sup> = 10<sup>a</sup>; 4 et 5 reliquis longiores. Pennæ cubiti ad  $\frac{2}{3}$  alæ flexæ extensæ.

This little bird has a greater interest for us on account of its remarkable resemblance to our *Sylvia trochilus*. I have only seen the above-described specimen, and can say nothing else about its way of living than that even in its actions it has an extraordinary resemblance to *Sylvia trochilus*, so that I fully believed I had found that species until an examination of its flattened, much broader beak, and the somewhat different-formed wings proved my mistake. These are the only points in which the genus *Acanthiza* (Vig. et Horsf.) differs from our *Sylvia*; the beak is even unlike that of our *S. hippolais*. In New Holland there are several species to be found. I heard no note from the bird described. This is most likely the kind to which those authors allude who speak about the Indian *Sylvia trochilus* (for example, Edwards in the text to plate 278).

19. *Acanthiza arrogans*, n. Superne olivaceo-viridis, subtus tota flava; vertice vittis 2 longitudinalibus nigris e rostro ad nucham.

♂ Calcutta, 9 Febr. Corporis latera flava. Alæ fuscæ, plumis virescenti-marginatis; pennis intus albidis. Rectrices utrinque 2, pogonio interno e medio ad apicem albo, omnes rectæ, apice angulatæ, unde cauda emarginata. Rostrum superne fuscum et pedes albidus. Magnitudo et statura *Reguli*. Longit. 4 poll.; ala 57 mill., tarsus 17, rostrum e fronte 10; altit. 2, latit. 4. Rostrum apice non compressum, maxillis æqualibus, superioris apice non deflexo. Remigum 1<sup>a</sup> paullo brevior quam in præcedente; 5<sup>a</sup> reliquis sublongior. Lingua sat magna, apice rotundata, integra.

This bird bears a considerable resemblance to our *Regulus*. I have met with it only twice, amongst bushes, in which it hopped about without being shy. The specimen described hopped actively about in a low tree without concealing itself, and screamed a rough *tshack! tshack!* as if it intended to drive me away. I could not find out how far it had begun to build its nest. In its stomach I found only small hard beetles. This bird also is called by the natives *Tuntuni*.

20. *Malurus longicauda*, Temm. Man. ed. 2. Anal. p. 48.—*Motacilla longicauda*, Gm., Lath. no. 144. *Sylvia guzurata*, Lath. 173 (ex it. Sonnerati).

· Olivaceo-iridis, subtus cum gula albus, capite antierius tibiisque fulvescentibus.

♂ reetricibus 2 mediis elongatis, linearibus dimidio longioribus quam proximis. ♀ reetricibus simpliciter gradatis, 6 mediis subæqualibus, coloreque paullo obsoletiore.

Magnit. *Troglodytis*; ala 46 mill., tarsus 20; reetrices mediæ maris 65, proxime sequentes 44, fœminæ 39. Iris flavescenti-alba, rostrum supra fuscum, subtus et pedes pallidæ. Capitis latera et supercilia griseo-albida, occiput fuscum. Reetrices fuscescentes, lateribus virides, margine apicis albedo. (♂ ♀ Febr., Apr., Maio. Testiculis Apr. Maio tumidissimis.)

Lingua apice truncata, lacero-setosa ut *Pari*.

Just as the two before-described birds seem to represent our *Sylvia trochilus* and *Regulus*, so it seems that this bird supplies the place of our *Troglodytes* in India, to which it bears, the colour excepted, a close resemblance. Its much larger feet and smaller wings give it a strange appearance. Like *Troglodytes* it hops restlessly and boldly about, often, but not at all times, with its tail spread out, and is seldom quiet. It also seems often to make signs as if it would attack the person who approaches it; but it hops only in trees, generally in the lower ones, and not among stones, &c., as *Troglodytes*. Its note is a loud whistling *tshuti! tshuti!* I did not hear any clear sounds. According to a description in Lath. 'Gen. Hist.' it builds its nest between two leaves of the mango-tree. I found in its stomach only the remains of finely-chewed insects. In the entrails of both the males were found a great many intestinal worms as fine as threads in the neighbourhood of the kidneys, and it seemed as if the liver of one had been gnawed by them, yet the bird appeared to be quite lively and gay. Three of the males I examined were without those worms. The liver in all of them was of a whitish colour, which was quite common among the Bengal birds. This kind is common in the neighbourhood of Calcutta. It is met with all over India and China. In Java (and Sumatra?) there is a kind which is very much like this, and ought perhaps only to be considered as a variety\*. Dr. Mellerborg, who visited Java in 1827, likewise through Baron Gyllenkrok's patronage, has brought several specimens of them, but only on his second visit.

21. *Iöra tiphia*. Supra viridis (vel nigra) subtus flava, fasciis alarum 2 albis; rostro valido nigricante, tomiis late albis.—*a.* superne nigra: *Motacilla zeylonica*, *Gm.* = *Sylv. zeyl.* ♂ *Lath.* 91. *Le Quadricolor*, *LeVaill. Afr.* 141 (e Ceylon).—*b.* superne viridis: *Motac.*

\* *Malurus sepium*; *Motacilla sepium*? *Raffl. Sumatr. Linn. Tr.* xiii. Fusco-olivaceus, subtus flavescenti-albidus, capite antierius cum lateribus gulaque tibiisque rufis. Reetricibus apice albis fascia ante apicem nigricante. Mensuræ, et differentia sexus ut *M. longicauda*, sed rostrum fortius, ♂ jugulo fusco-olivaceo.

tiphia, *Linn. S. N.* (ex icone *Edw.* 79 = *Ficed. bengalensis*, *Briss.* iii. p. 484. e Bengal.). Figuiet vert et jaune, *Buff.* *Sylvia zeylonica* ♀, *Lath.* Iōra scapularis, *Horsf. Jav. Linn. Trans.* xiii. p. 151. *Turdus scapularis*, *Raffl. Sumatr.* ib. p. 311.

*Descr.*—Var. *viridis* ♂ (Calcutta 28 Febr. testic. parvis) superne e fronte ad caudam flavescenti-viridis, opacus, uropygio frontequo paullo magis flavo tinctis. Plumæ dorsi basi cinereæ medio obsolete albæ. Capitis latera cum orbitis, totumque gastræum flava, hypochondriis olivaceo tinctis. Alæ nigræ, tectricibus majoribus apice pure albis, unde fasciæ 2 albæ; carpi margo flavus. Remiges cubitales latius flavo, primariæ tenuissime albo marginatæ. Cauda pure nigra, pennis 2 mediis totis, reliquis margine apicis virescentibus. Pedes nigricantes. Iris fusca. Long.  $5\frac{1}{2}$  poll. Extensio alarum 7 poll. Ala 60 mill., cauda 51, tarsus 18, rostrum e fronte 15.—♀ (Calcutta 28 Febr.) similis mari, sed differt coloribus minus distinctis. Cauda tota olivacea, viridi marginata, transversim undatimicans, pennis utrinque 2 margine interiori tenui, virescenti, definito. Venter sordide flavus; alæ fusco-nigræ fasciis albis flavo inquinatis. Mensuræ ut maris. (Fœmina 7 Febr. et in medio Martii huic simillima.)

Var. *superne nigra* e Java Mus. Gyll., ex “*Ind. Or.*” Mus. Stockh. (veris ♂). Superne atra, nitida, plumis oblecta albis et flavis. Uropygium olivaceum. Capitis latera cum orbitis, collum antice totumque pectus flavissima, abdomen album. Alæ et cauda ut ♂ supra descr. Ala 63—66 mill.

*Generica.*—Rostrum rectum validum crasse subulatum, subteres, longit.  $\frac{2}{3}$  capitis, apice superiore inciso, vix deflexo, vixque longiori. Vibrissæ fere nullæ. Nares nudæ, membrana angusta, fornicata. Alæ breves, rotundatæ, remigibus 4—6 æqualibus, cubitales parum superantibus. Cauda mediocris, æqualis, integra. Pedes mediocres, scutati, pollice fere longit. dig. medii.

All the specimens I saw were of a green colour, and I am not aware that individuals of a black colour from Bengal have been described. The black specimens of Java which I have seen have not shown any dissimilarity that would warrant their separation into two species. Common as this bird was, I did not shoot any after the middle of March, nor have I noted down whether I saw any after that time. In February they seemed already paired, and when I shot the above-described male without killing it immediately, it remained hanging on a branch, and the hen-bird came directly and tried to help it up with its beak. As a matter both of feeling and of science, I was now induced to make their fidelity eternal by another shot. From the above-described anatomical proportion one is led to believe that this male was young, and that it was its mother which intended to assist it; but in that neighbourhood I found none but these two, which I had observed for more than an hour. In attitude and actions this bird resembles more a *Fringilla*, for example the Bulfinch. It hops

steadily about in the tree without the restless or prying actions which commonly belong to the insect-eating birds; but the formation of the beak is sufficient to distinguish it from the Sparrow-kind; the edges of the under mandible being rather high, and towards the end very much bent in. In its stomach I found small and hard beetles, and eggs of butterflies. The common decoy-note was a quickly repeated high and clear *pipipi-pipi!* or *tuj tuj tuj . . .!* From the male I often heard a very charming but soft singing which was greatly varied. The Bengalese name is unknown to me.

22. *Timalia grisea*.—*Turdus griseus*, Gm., Lath. no. 91 = Merle gris de Gingi, Sonn. Voy. (Huc etiam : Baniabbou de Bengale, Alb. 3. 8. pl. 9 (mala) = Merula bengalensis, Briss. 2. 260, Edw. t. 184 (colore nimis obscuro, pedibus debito minoribus et iride rubra); cit. sub Turdo canoro Auct.\*)

Pallide grisea, subtus pallidior, leviter fulvescenti tincta; macula nuda pone oculos, rostro, pedibusque flavescenti-albis, remigibus intus fuscis.

Magnit. et statura *Turdi*, pedibus multo majoribus, alisque minoribus  $9\frac{1}{2}$  poll., ala 102 mill., tarsus 35, cauda 100. Iris nivea. Plumæ laceræ, decompositæ, rachides in dorso obtecte albidæ; pectus et variæ partes, certo luminis situ obsolete fusco-micante maculata. Linea superciliaris nulla distincta. Vibrissæ minimæ, subreflexæ. Rostri et pedum forma similis *Graculæ*. Cauda valde rotundata, transversim undato-micans.

This kind is common near Calcutta, where in February and March I saw them in families of five or six together hopping about on the ground among small trees and bushes. When startled they flew into the lower trees. Their flight is quick with a noisy action of the wings, but it is feeble and never continued for any length of time. Like the Thrush-kind they hide themselves very cleverly behind the branches and leaves. They never remain quiet, and make a great disturbance with their chattering noise, which is somewhat like that heard from young starlings. From these sounds this species has received its Bengalese name *tshattaria* (with the accent on the first syllable), which is not at all a bad name for it. In Lath. 'Gen. History' (under *Turdus canorus*) the name of *Chatareea* is mentioned, according to the account of Buchanan. I did not hear any song. Its food consists of insects, small snails, grains of rice, &c., which I always found in its stomach. In the beginning of February I got a young

\* Reliquæ citationes *T. canori* referendæ sunt ad *T. sinensem*, Briss. et L. (L'Hoanis de la Chine, Buff.) sc. *Turd. chinensis*, Osb. It. 309. *Corvus faustus*, Linn. Am. Ac. iv. *Lan. faustus* et *Turd. canorus*, Linn. S. N. x. et xii. Sic *T. canorus* = *T. sinensis*, nobis, *Timalia fausta*, e div. *Garrulæ*, Lesson.

male, which had in the cavity of the chest, under the skin, between the branches of the *furcula*, a globular formation, larger than its head, hard, of a whitish gray colour, and only slightly attached by the cellular tissue. This specimen had a sickly appearance, ruffled feathers, and the point of its beak was a little injured as well as very much grown out of its proper form. A great number of species of this genus (*Timalia*, Horsf. L. Tr. xiii.) are found in the countries around the Indian Sea. They supply on the old continent the place of the American *Myothera*, to which they have a great resemblance. They are remarkable for their plain gray or brownish colour, large feet, small wings, &c. None of the birds of our climate are so deficient in that gaiety of plumage which distinguishes the feathered tribe; but the tropical countries excel in both splendour and simplicity in great as well as small things. The species of the old continent, which in Temminck's Pl. Col. are called *Myothera*, belong (most likely all) to *Timalia*\*.

23. *Cinnyris ceylonica*, Cuv.—*Certhia zeylonica*, Linn. et Auct.

♂ Castaneus ventre flavo, pileo alarumque carpo purpurascens-viridibus, gula uropygioque violaceis, nitidissimis cauda æquali.

Magnit. *Sylvia*,  $4\frac{1}{2}$  poll., ala 55 mill., tarsus 17, rostrum 17. Rostrum capite paulo longius, in arcum  $\frac{1}{8}$  circuli curvatum.

♂ 7 Febr. Iris fulvescens (subgrisea), colore viridi capitis anterioris carpique minus extensis. Testiculi magnit. pisi, dexter albus, sinister nigro-cinereus, albido reticulatus.

♂ 27 Apr. Iris coccinea, color perfectus, tectricibus alæ parvis omnibus, capillitioque toto viridi-æneis, etiam jugulum violaceum. Testiculi maxime tumidi albi.

♂ 3 Mai. (Junior prioris anni?) Iris obscure rubra. Vertex et gula plumis immixtis cinereis. Uropygium olivaceo-cinereascens, plumis violaceis immixtis. Color metallicus capitis, gulæ alarumque parum extensus. Caudæ alarumque plumæ latius pallescenti marginatæ. Testiculi parvi, fere obsoleti.

I did not succeed in getting a female, although this species was quite common in the neighbourhood of Calcutta. They hopped quickly about between the branches of the trees, like our small *Sylvia*, i. e. *curruca*, *trochilus* and others, which they even resemble in flight. Sometimes I saw them hanging under the branches, like *Regulus*, in order to gather insects out of the buds. It has already been remarked by others, that the food of this bird does not consist entirely of honey, as was supposed from its long, divided and tubular tongue, but they use it to catch insects with. The stomach was always full of little husks, larvæ,

\* These remarks on the genus *Timalia* are generally correct, although the species above-described is not a *Timalia*, but a *Malacocercus*.—H. E. S.

and other insects, and in the one which I shot in February I found the seed of some plant. This bird, as well as many other small species, however, must be very fond of sweet things, because the Hindoos maintain that they live upon sugar, and the Bengalese name *Sokkor-kurra* signifies sugar-eater. In Madagascar some other kinds of *Cinnyris* are named *Soui-manga*, which it is said means the same. In the month of March, when the large cotton-tree (*Bombax malabaricus*) was in blossom, its tulip-like flowers were very much visited by these as well as some other birds, *i. e.* the Indian magpie and starling, but they look for insects and not for honey. The stomach is small and very thin, almost like skin; the liver is large and whitish; the tongue is long, divided into two narrow flat strips, and entire, with the margins near the root turned in, almost forming a tube. I only heard a short whistling sound from them occasionally.

24. *Motacilla alba* var., tectricibus alarum majoribus intermediis totis, reliquis pogonio externo albis.—♀ 22 Martii; ala 81 mill., tarsus 20, rectrices mediæ 82. Plaga juguli lunata, verticeque usque in nucham, nigris.

Only one specimen of this species was obtained, but several were seen in the same place near Sucsagor, in the vicinity of the river, also one near Calcutta, February 9. They were all gray above as with us, but in the female brought home, the dorsal feathers have towards their sides and tips a slight though conspicuous streak of black which cannot be seen at a distance in the living specimens. Possibly the older individuals become black in summer, as in many places in southern Europe and central Asia. I saw no more wagtails after the 22nd of March; they probably then migrate to the north. With the exception of the above-mentioned distinctions, the specimen brought home is altogether like the same bird in winter-clothing (March, April) with us, except that the black and white colouring of the head is somewhat purer than is usually the case here with the females. Notes, habits, &c. not thoroughly known.

25. *Motacilla flava*.—Our well-known Yellow Wagtail was seen several times (first on February 9), and was shot once, on March 12, on a grassy plain near the river, where it occurred abundantly along with *Charadrius minor*. As I on that day had collected more birds than I could preserve, the specimen was not brought home; I trusted to shoot a wagtail another time, but did not succeed. As far as I could see, it showed no difference from our common species of South Sweden; and among many which I saw alive at a short distance, I perceived none with a black head, as is common with the adult males in summer plumage in Dalmatia, Lapland and central Asia.

[*Motacilla boarula*?—Several times in February and March there were seen near Calcutta and Serampore, wagtails which could scarcely be other than *M. boarula*; but as I happened to miss them, and had not before seen any living specimen of the species mentioned, I will assert nothing, but merely record what I saw.]

26. *Anthus arboreus* is also one of the commonest birds of Bengal. Two males brought home show no other difference from a Swedish specimen killed near here, than that the dark streak through the eye is somewhat broader, and the spots on the back are somewhat less evident than in Swedish specimens. Their mode of life appeared to me unusual, as I had not before seen them in their winter abodes; they flew about in flocks of five or six together during the month of February, on the ground near bushes and in places overgrown with trees. When alarmed they flew up into the trees. Only seeds were found in the stomach. I do not remember to have seen them after the month of March, but I presume that they then remove to their native abodes in the north. The Bengal name is *Tjorta* or *Tjah*.

27. *Anthus pallescens*, Vig. et Horsf. Linn. Trans. xv. p. 229.—Griseus, fusco-maculatus, subtus albus: pectore antico lineolis crebris oblongis nigro-fuscis; pedibus validis, tarso longit.  $\frac{1}{3}$  alæ; ungue postico leviter arcuato, valido, longiore quam digito.

♀ Calcutta initio Maii. Magnitudo corporis fere *A. pratensis*; longit.  $5\frac{1}{2}$  poll. Ala 74 mill., cauda 51, tarsus 25. Affinis *A. campestri*, sed pedes majores, caudaque brevior. Supercilia lata, albida, elongata. Linea per oculos et altera ordinaria sub oculis distinctæ, fuscæ. Lineola ordinaria ad latera gulæ tenuis, nigro-maculata. Maculæ pectorales parvæ, longit. 2–3 millim., fasciam pectoralem formant; juguli ventrisque nullæ. Hypochondria fulvescentia. Rectrices utrinque 2 albæ, basi oblique fuscæ; 3<sup>a</sup> margine externo tenui albo. Rostrum et pedes albo-pallidi. Iris fuscescens. Rostrum paullo longius, sed non minus validum quam in *A. arboreo*. Color superne griseo-pallescens, plumis angulatim detritis; superne non rufescens ut in descriptione citata. Alarum fasciæ nullæ.

[Aliud individuum, non conservatum, 23 Martii, differt rectrice 2<sup>a</sup> pogonio externo toto fusco; 3<sup>a</sup> immaculata.]

This Titlark is only found in open fields, especially on arable land, and never perches on trees. It is consequently not seen near Calcutta, but is common on the more open fields some miles therefrom. The elevated tarsi give them a peculiar, easily recognised aspect, and they are often seen to raise themselves with the body straight up, while the other species of the genus always carry the body horizontal. One may also sometimes see them hop with both feet together, but the most usual action is springing like that of the other birds of the Lark kind. On one occa-

sion I heard one singing some notes, and quavering like a lark, but only for a moment. The food consists of insects, such as *Acheta*, together with rice and other seeds. Both kinds of food were found together in the stomach. In the beginning of May they were seen in pairs; they had previously been solitary. It seems that the same species is also found at Ulimaroa, for I have no doubt that it is identical with the species above quoted.

28. *Alauda* —— (*A. arvensis*, Sonn. Voy. ?).—On the great plains about Sucsagor, north from Calcutta, two species of *Alauda* were decidedly seen, which were analogous to *A. arvensis* and *arborea*. One was killed at the first shot, but as I was wearied that evening, and delayed preparing the specimen, I had the misfortune next day to find this, as well as a large portion of my other specimens, destroyed by ants. My intention of shooting another failed, nor did I keep what the ants had left. It was somewhat smaller than *A. arvensis*, had rather stronger markings on the sides of the head, much as in *A. arborea*, and a difference of colour in the tail-feathers. [Rectrice extima alba, 2<sup>a</sup> intus oblique fusca, pogonio externo quoque fusco, relicta plaga magna alba trigona.] The song was (in March) not so lively as our lark's, but more tedious and monotonous, such as we sometimes hear it in August. The feathers were worn into an angular form, and the shape of the beak was as in *A. arvensis*. The other species was not obtained.

29. *Alauda gingica*, Lath. no. 14.—Petit Alouette grise de Gingi, Sonn. Voy. *Fringilla cruciger*, Temm. *Pl. Col.* 269. 1. Duree Finch, Lath. *Gen. Hist.* vi. 115. Genus *Megalotis*, Swains.

Grisea, gastræi vitta longitudinali, lata, in jugulo cruciata, cum superciliis lorisque nigris. Rostrum crassissimum.

♂ 22 Mart. Iris fusco-rufescens. Rectrix lateralis extus oblique albo-dimidiata. Alarum tectrices inferiores nigræ. Dorsum obsoletissimæ fusco-maculatum. Frons et capitis latera sordide alba. Long. 4½ poll; ala 72 mill., tarsus 17, cauda 40. Lingua apice truncata, setoso-lacera.

This elegant little Lark was seen several times in the open fields. In its flight and motions on the ground it completely resembled a lark, not a *Fringilla*. The specimen described was shot just as it settled on the ground after singing for some moments with expanded wings. Only seeds were found in the stomach. According to Buchanan (in Latham's *Gen. Hist.*), it lays its eggs in May, and is called *Duree* in Bengal. Of this and some allied species a separate genus, *Megalotis*, Sw., has been made, which from its thick beak has been included among the Finches; but the form of the lower mandible, as well as the mode of life, distinguish it sufficiently therefrom, and it is in order the better to draw attention hereto that I have retained

the generic name *Alauda*. They differ however from the Larks in the thickness of their beaks, the form of the tongue, their unspotted plumage, and the decidedly short and curved hind-toe. Here also belongs *Fringilla otoleucos*, Temm. Pl. Col. 269. 2, but not *F. simplex* and *githaginea* from Africa, which are true *Fringillæ*, Linn. (*Pyrgitæ*, Cuv.).

30. *Fringilla domestica* was found at Calcutta just as in Sweden. On two occasions I had an opportunity to observe sparrows at three to five yards' distance on board ship, and I saw them also in the town, but not in the country, so that I had no opportunity of shooting any. All the males (at least ten or twelve), which I could observe accurately in the manner mentioned, had the head gray above and brown on the sides, as with us. It is remarkable that the hot climate did not make the head of the male brown, as in Italy, Spain and Egypt. Possibly I did not see any old male. *Fringilla montana* was not seen.

31. *Fringilla bengalensis* (non *F. bengalus*, auct.).—*Loxia bengalensis*, *Briss.*, *Linn.*, *Lath.* no. 36; *Edw.* 189; *Buff. Pl. Enl.* 393. 2. (♂ fig. mala). Genus *Ploceus*, *Cuv.*

Grisea, subtus rufescenti-albida, dorso fusco-maculato; capite superne flavo, lateribus pallide fusco. Rostrum altitudine duplo longius.

Paulo major quam *F. domestica*; rostrum præsertim majus. Ala 74 mill., tarsus 20. Remiges 10; 1<sup>a</sup> spuria. Gula albida.

♂ adulta, Mart., Apr., Maio, capillitio toto flavissimo.

♂ jun. (Aprili) fronte ad medium verticem flava.

[♀? Apr. Ovario? ictu læso. Similis ♂ juniore, sed colore paullo sordidior.]

In attitude and habit this bird resembles our common sparrow, and, the yellow crown excepted, its colour is much the same. The species was quite common about Calcutta after April, when they began to build their nests; before April they were not seen. The nests are skilfully suspended under the enormous leaves of the common palm-tree (*Borassus flabelliformis*). The best are of compact coarse hay, and have the appearance of a purse; they are 13 or 14 inches long, 7 inches broad in the lower part, growing smaller upwards to the breadth of 2 inches, and externally smooth; but they are in great part solid, so that only the lowest extremity has a small spherical cavity of 5 inches diameter, with a pendent cylindrical entrance at the side. The nest is built from above, so that the cavity is made the last. When it is half-made, so that the bottom is wanting, a transverse wall is made, and the structure has consequently two holes in the lower part, one for the nest, the other for the entrance. These are afterwards completed, each by themselves. The males were supposed to be chiefly occupied in collecting materials, and this

seemed the most probable. Although I shot many in order to procure a female, I only succeeded in getting the one above-noticed, which however I cannot with certainty pronounce to be one. It was shot down from a half-finished nest at more than twenty yards high. Two or three nests are often attached to the same leaf, and twenty or thirty in the same palm. In the beginning of May the newly-hatched young were obtained from a nest, and three quite white eggs from another, although many nests were scarcely half-built.

The notes near the nests were like the warbling and call-notes of the linnet. No song was heard. In the stomach only rice-grains were found, which they were seen to pluck while hopping about the cottages, like sparrows with us. The Bengalese name is *Bawee* (the *w* sounded as in English).

[To be continued.]

### XXVIII.—On the Growth of Cell-Membrane.

By HUGO V. MOHL\*.

[Continued from p. 155.]

WHEN we compare the conclusions necessarily resulting from these calculations with Harting's theory, we see that they are decidedly opposed to it. We have good grounds for the assumption that the mean number, derived from the measurement of ten rows of cells, indicates with tolerable accuracy the course of the normal development of the wood-cells of *Hoya carnosia*, since the mean numbers already derived from the measurement of five rows of cells differ but very slightly from those above mentioned. If we assume this, it follows that the nearer the intermediate (*mittlere*) wood-cell (if I may so express myself) of this plant approaches the margin of the wood in consequence of the progressive conversion of the inner cambium-cells into wood-cells, the more it enlarges in the radial direction, so that its diameter is  $\frac{1}{102}$  of a millimetre when it lies in the second row of cambium-cells (counted from the wood), and when it has advanced to the inner row, bordering the wood, the diameter is increased to  $\frac{1}{96}$  of a millimetre. According to Harting's view, the cavity of the cell will continue of this size †, since in his opinion the con-

\* From the 'Botanische Zeitung,' May 29th and June 5th, 1846. Translated by Arthur Henfrey, F.L.S. &c.

† I here take the diameter of the cavity of the cell as equalling the diameter of the whole cell, which is not altogether right, but deviates little from the truth, since the cambium-cells of *Hoya carnosia* have very thin walls, and as these walls are double, only half this thickness should be reckoned. This is so small a size and one so difficult to give accurately that I thought it might be disregarded; in a measurement which however cannot claim strict ac-